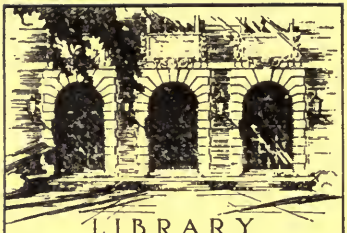

1954 ILLINOIS CORN TESTS

Variety performance

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UNIVERSITY OF ILLINOIS
AGRICULTURAL EXPERIMENT STATION in cooperation with
ILLINOIS STATE NATURAL HISTORY SURVEY . . . January, 1955

Location of 1954 test fields

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Special acknowledgment is due W. C. Jacob for processing the data on Illiac (automatic digital computer). Acknowledgment is also due the following persons for collaboration in these tests: Farm advisers and assistants in three counties: A. R. Kemp and Don Teel, Knox; A. E. Golden and Max Fox, DeKalb; and L. B. Kimmel, Saline; vocational agriculture teacher, H. C. Bishop, Eldorado.

Urbana, Illinois January, 1955

Publications in the Bulletin series report the results of investigations made or sponsored by the Experiment Station

1954 ILLINOIS CORN TESTS[1]

YIELDS were seriously affected by drouth in much of central and southern Illinois in 1954. Record yields, however, were reported in northern Illinois. The average yield of 49.5 bushels an acre estimated for the state as a whole is 4.5 bushels lower than the 1953 average and 2.1 below the 10-year average. Total production was about 449 million bushels as compared with 500 million bushels in 1953.[2]

The quality of the crop was generally below that of recent years because the ears did not fill well and because of earworm damage and rots. Ear dropping because of damage from corn borers was above normal.

PLAN OF THE TESTS

Number of hybrids and their sources. Two hundred fifty-six hybrids were grown on five regular test fields. Forty-three companies and individuals and the Illinois Station furnished seed for the tests.

Eighty-one hybrids were grown at Galesburg, Urbana, and Brownstown. Seventy-five entries were tested at DeKalb at 2 planting rates. Sixty varieties were grown at Ridgway. (For a summary of results on these fields, see Table 1.)

A representative of the Illinois Station or of the Illinois Crop Improvement Association collected seed for planting the test fields directly from the warehouses of the producers entering the corn. Seed of Illinois and U. S. hybrids in commercial production was obtained from the producers of these hybrids.

Selection of entries. Each year seed corn producers are given an opportunity to nominate hybrids for testing on the various fields. For some fields the number of hybrids nominated is so great that they cannot all be tested. For these fields selection is based partly on the quantity of the hybrid that is produced and partly on the area where it is sold.

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[1] By J. W. Pendleton, First Assistant in Crop Production; Benjamin Koehler, Professor of Crop Pathology; A. L. Lang, Professor of Soil Fertility; P. E. Johnson, Assistant Professor of Soil Fertility; J. H. Bigger, Entomologist, Illinois State Natural History Survey. [2] Estimates of the average yield for the state were furnished by the Illinois Cooperative Crop Reporting Service, Illinois State Department of Agriculture cooperating with the U. S. Department of Agriculture.

Table 1. — GENERAL INFORMATION:
Illinois Hybrid Corn Tests, 1954

Field, county, location and number of entries	Date planted	Date harvested	Average acre-yield	Moisture in grain	Erect plants	Stand
			bu.	*perct.*	*perct.*	*perct.*
DeKalb: DeKalb N75	May 11	Oct. 26	107.7	23.0	95	87
Galesburg: Knox WNC 81	May 14	Oct. 14	95.2	22.9	94	89
Urbana: Champaign C 81	May 18	Nov. 2	105.0	16.8	95	93
Brownstown: Fayette S 81	May 17	Nov. 4	37.2	15.2	88	87
Eldorado: Saline Ex. S 60	May 15	Oct. 28	71.2	17.2	97	92

COOPERATORS: RALPH ANDERSON and RALPH HAWTHORNE, *Knox county;* EARL SCHWARM and H. O. LEWIS, *Fayette county;* C. J. WAGNER, *Saline county.* Tests in DeKalb and Champaign counties were located on University farms managed by R. E. BELL and C. H. FARNHAM.

A number of promising experimental hybrids are also included in the tests. Other hybrids are grown to meet the field-performance requirement for certification. A few Station-produced open-pedigree hybrids are included at each location. The 1954 performance of additional experimental hybrids is reported in Illinois Bulletin 584.

Soil characteristics of fields. The test fields are usually medium to high in productivity, and each represents a soil type common to the region where it is located. Each field is selected for uniformity in soil type, productivity, and drainage. Approximate locations of test fields are shown on the map on page 2. Soil characteristics and management are described in Table 2.

Field-plot design. A 9 x 9 randomized, lattice-square field-plot design with 5 replications was used on the Galesburg, Urbana, and Brownstown fields. Controlled, randomized block designs were used at the other locations.

Method of planting. All test fields were planted by hand on land prepared in the regular way for corn. Individual plots consisted of 2 rows 5 hills long. Four kernels were planted to the hill at Galesburg and Urbana; 3 kernels were planted at the two southern locations. At DeKalb 2 rates of planting, 4 kernels and 6 to the hill, were used.

GROWING CONDITIONS

In northern Illinois the 1954 growing season was generally favorable. Large areas of southern and central Illinois, however, suffered severely from drouth.

Table 2. — TEST FIELDS: Soil Characteristics, Management Practices, and Rainfall in 1954

Soil type	Lime requirement	Available phosphorus	Available potassium	Previous crops, soil management, and rainfall
		NORTHERN: DeKalb		
	tons			
Flanagan silt loam...	1	High	Very high	Corn 1950; oats 1951; red clover 1952; corn 1953; 200 pounds 0-20-0 and 250 pounds ammonium nitrate plowed down; rock phosphate applied in 1950 Rainfall (inches) May 2.06; June 4.70; July 4.66; August 6.88
		WEST NORTH-CENTRAL: Galesburg		
Muscatine silt loam..	2	High	Very high	Corn 1951; oats 1952; alfalfa-brome hay pasture 1953; limestone and rock phosphate applied in past Rainfall (inches) May 5.4; June 3.4; July 2.4; August 5.0
		CENTRAL: Urbana		
Drummer silt loam...	0	High	Very high	Corn 1950; soybeans 1951; corn 1952, 1953; 300 pounds ammonium nitrate plowed down; limestone and rock phosphate applied in past Rainfall (inches) May 2.73; June 3.05; July 2.92; August 4.69
		SOUTHERN: Brownstown		
Cisne silt loam.....	2	High	High	Corn 1950; oats and clover 1951; corn 1952; oats and clover 1953; 300 pounds muriate potash broadcast before planting; 200 pounds ammonium nitrate side-dressed at second cultivation; limestone and rock phosphate applied in past Rainfall (inches) May 3.25; June 1.40; July 2.29; August 3.32
		EXTREME SOUTHERN: Eldorado		
Probably Patton silty clay loam.....	1	High	High	Longhorn turnips 1951; soybeans 1952; wheat (sweet clover) 1953; 800 pounds 0-20-20 plowed down; 100 pounds of nitrogen side-dressed at first cultivation Rainfall (inches) May 2.31: June 1.43; July 3.67; August 4.22

The soil type designation for all fields have been approved by HERMAN WASCHER, Assistant Professor of Soil Physics. Rainfall gages courtesy of GLENN STOUT, Head of Meteorology Division, Illinois State Water Survey.

All test fields were planted in excellent seedbeds and early growth and development were fine. At Brownstown the vegetative growth indicated a bumper crop, but a moisture deficiency and hot winds in July resulted in disappointing yields. Eldorado also suffered from lack of late summer moisture. Moisture at other locations was good to excellent (see rainfall, Table 2).

Stalk breakage was not common in the test plots in 1954, though some occurred on the fields at Brownstown and Galesburg. The quality of the grain was generally below normal because of poorly filled ears, earworm damage, and resulting rots. Fall weather was favorable for drying, and grain moisture was lower than average.

Very little damage was evident from stalk and leaf diseases, and for the first time in many years, no disease notes were recorded in the test plots of commercial hybrids.

INSECT DAMAGE

European corn borer. During 1954 the increase in the numbers of European corn borers, *Pyrausta nubilalis* (Hbn.), that had been threatened occurred. At the present time, the northern half of Illinois has an overwintering population approximately 50 percent larger than the population at this time in 1953. This means that corn production in 1955 is again threatened in this area.

The Galesburg and Urbana test fields showed the results of this increase (Tables 3 and 8). At Galesburg there was extensive plant breakage and ear dropping. On this field an average of 55.1 percent of the plants were broken above the ear, the range of breakage being 42.1 to 76.1 percent. An average of 7.2 percent of the plants were broken below the ear, the range being 0.6 to 14.6 percent. An average of 4 percent of the ears were dropped (assuming one ear per plant). The range in dropped ears was 0.5 to 8.9 percent. In plants broken both above and below the ear and in ear dropping, differences between hybrids were significant.

At Urbana, practically no plants were broken, but ear dropping was general throughout the field (Table 8). An average of 3.6 percent of the ears was dropped. The range was 0 to 12.6 percent. In ears dropped, hybrids varied significantly.

At both Galesburg and Urbana, a little ear dropping was caused by corn earworm, *Heliothis armigera* (Hbn.), but not enough to alter the figures materially.

Corn rootworm. The Eldorado test field, which was examined August 2, 1954, showed extensive plant lodging because of rootworm, (*Diabrotica* spp.), attack and a windstorm in early July.

Table 3. — EUROPEAN CORN BORER DAMAGE: West North-Central Illinois, Galesburg, 1954

Entry	Plants broken		Ears dropped[a]
	Above ear	Below ear	
	perct.	*perct.*	*perct.*
A.E.S. 702 (Mountjoy)..	55.4	8.1	4.3
Ainsworth X-13-3.....	59.2	13.8	6.9
Ainsworth X-14-3.....	55.0	8.9	5.0
Ainsworth X-21.....	43.1	6.6	6.6
Bear OK-20.....	48.0	4.0	2.3
Bear OK-24.....	46.5	7.0	1.6
Bruns P-37.....	59.2	11.2	8.9
Crow 402.....	63.3	3.2	1.9
Crow 407.....	76.1	.6	3.4
Crow 608.....	58.4	7.8	3.6
DeKalb 628A.....	54.0	9.2	2.9
DeKalb 817A.....	61.7	6.7	3.9
DeKalb 825.....	63.3	2.3	7.3
DeKalb 837.....	50.6	6.7	1.7
DeKalb 847.....	48.6	3.8	.5
Doubet 25.....	52.1	3.0	7.9
Doubet 42.....	52.6	3.4	6.9
Doubet 43.....	43.7	7.7	4.4
Funk G-95.....	52.6	6.9	2.3
Funk G-95A.....	50.9	5.9	4.1
Griffith 129.....	57.3	11.2	2.8
Holmes 21A.....	56.2	5.4	4.9
Holmes 39.....	57.5	8.9	7.8
Holmes 46.....	56.3	5.7	2.8
Huey 23.....	61.7	10.9	7.1
Huey 42.....	49.2	7.8	3.4
Huey 235.....	59.6	11.5	4.9
Hulting 102.....	49.5	4.3	4.9
Hulting 241.....	61.0	3.4	3.4
Illinois 21 (Dittmer)....	49.2	7.3	2.8
Illinois 1091 (Mountjoy)	59.6	6.4	1.9
Illinois 1337 (Dittmer)..	58.3	11.9	5.4
Illinois 1570 (Graham)..	64.2	8.4	3.4
Illinois 1814 (Station)..	63.4	4.3	3.2
Illinois 1831 (Station)..	47.1	5.9	4.3
Illinois 1873 (Station)..	45.9	2.2	3.3
Lowe 514.....	58.9	7.8	4.4
Lowe 523.....	59.6	8.8	2.9
Lowe 530.....	52.0	7.0	5.8
Moews 520.....	56.0	5.1	3.4
Moews 523.....	44.5	8.5	4.3
Moews 524.....	42.9	4.9	3.3
Moews 550.....	61.3	5.4	6.0
Morton 12A.....	50.0	6.6	4.2
Morton 70.....	54.6	4.0	2.3
Morton 303.....	53.7	6.9	4.0
Mountjoy 114.....	50.6	9.1	2.8
Munson 5.....	57.9	3.8	2.7
Munson 77.....	62.1	6.6	4.4
Munson 119.....	56.6	8.1	1.7
Null 68.....	54.8	7.6	1.9
Null 83.....	51.5	8.5	6.7
P.A.G. 303.....	53.0	5.5	1.1
P.A.G. 347.....	49.7	8.8	5.0
P.A.G. 383.....	47.8	4.9	4.4
P.A.G. 392.....	60.4	8.2	4.9
P.A.G. 403.....	62.6	3.8	3.8
Pioneer 313B.....	55.3	14.0	3.9
Pioneer 345.....	54.3	8.2	3.8
Pioneer X 0101.....	44.9	5.6	3.4
Pioneer 6063.....	48.7	7.9	3.7
Pioneer 9212.....	62.4	5.3	1.6
Producers 13-1.....	59.8	8.4	6.1
Producers 525.....	47.7	13.8	1.7
Producers 900.....	57.6	8.7	1.6
Producers 940.....	55.6	5.0	2.5
Robe 20.....	62.7	4.7	8.3
Schwenk 24.....	56.9	8.8	7.7
Schwenk 27.....	49.4	3.9	4.5
Schwenk 34.....	55.8	10.5	7.7
Sieben 320.....	62.3	4.4	.5
Sieben 340.....	42.1	9.0	2.8
Sieben 360.....	56.9	6.6	2.4
Stewart 51.....	57.8	5.6	5.0
Stewart 60.....	53.1	4.5	3.9
Stiegelmeier 300.....	57.8	13.3	4.6
Stiegelmeier 301.....	50.0	15.3	1.1
Stiegelmeier 379.....	57.7	10.7	3.0
Tiemann 61.....	67.4	2.2	1.1
Tiemann 78.....	60.1	11.2	4.3
U.S. 13 (Graham)....	55.6	14.6	5.3
Average of all entries	**55.1**	**7.2**	**4.0**
Difference necessary for significance.....	**11.0**	**5.7**	**4.2**

[a] Assuming one ear per plant.

At harvest time, however, practically all the lodged plants had regained an erect position. The result was that plants that had been lodged were elbowed. At this time, the plants that had been lodged 45 degrees or more in August and then elbowed to uprightness were counted (Table 10). The range was 5.3 to 62 percent, and the average 22.4 percent. Differences between many hybrids were significant.

Other insects. Cutworms, armyworms, chinch bugs, and grasshoppers were abundant in some areas of the state and did considerable damage to crops. Corn earworm was more abundant in 1954 than it has been for many years. It is anticipated that at least the chinch bugs and grasshoppers will constitute a threat to the 1955 crops.

DISEASE DAMAGE[1]

All disease occurrences were exceptionally variable from place to place in Illinois in 1954. It is believed this variability can be attributed to great variations in weather conditions.

Stewart's disease. Because Stewart's disease was prevalent in 1953 and because the ensuing winter temperatures were above normal each month, severe damage from Stewart's disease in 1954 was anticipated, especially in the southern two-thirds of the state. Flea beetles, which carry this disease through the winter, were exceptionally abundant in April. This is earlier than usual. By the time the corn came up in May, however, nearly all the beetles had disappeared. The reason for their disappearance is not definitely known. Thereafter the beetles made a slow comeback, and Stewart's disease did not become conspicuous until somewhat later than normal, too late to cause serious Stewart's disease damage.

Corn inbreds again showed great differences in resistance to the leaf-blight phase of Stewart's disease (Table 4). To obtain comparative data on resistance to Stewart's disease, 70 inbreds were planted. Some of these inbreds were from unreleased lines and others are in wide use. Two plantings, May 6 and May 18, were made in 3 replications for each date. Each plot was thinned to 24 plants. This thinning made the plant population 12,000 per acre. As an indication of expected earliness of maturity, records were kept on days to nearly full tassel.

Dry weather caused premature dying of leaves in some lines, in some cases to the extent that Stewart's disease readings could

[1] Data on disease prevalence and estimates of losses are based principally on surveys made by G. H. Boewe, Assistant Plant Pathologist, Illinois State Natural History Survey.

not be made satisfactorily. In those cases data for this disease are not given in Table 4. Premature leaf dying, due apparently to

Table 4. — REACTION OF CERTAIN INBRED LINES OF CORN TO SMUT AND TO STEWART'S LEAF BLIGHT; PLANTS RATED FOR PREMATURE DEATH OF LEAVES AND HEAT SCALD: Central Illinois, Urbana, 1954

(Average of 6 replications)

Inbred	Days to tasseling	Smutty plants	Leaves dead, Sept. 10[a]	Stewart's leaf blight[b]	Heat scald
Original lines compared with recovered lines bred for resistance to northern leaf blight					
		perct.	*score*	*score*	
Illinois Hy 2 (original)	73	1	3.2	1.0	None
Indiana Hy recovered[c]	75	3	2.8	.3	None
U.S. CI. 42A (Hy recovered)[d]	76	2	2.2	0	None
U.S. CI. 42B (Hy recovered)[d]	75	4	3.1	0	None
U.S. CI. 42C (Hy recovered)[d]	75	3	2.0	.8	None
Indiana 38-11 (original)	76	7	1.5	2.3	None
Indiana 38-11 recovered[c]	77	10	1.3	.8	None
U.S. CI. 38A (38-11 recovered)[d]	83	29	2.2	.8	None
U.S. CI. 38B (38-11 recovered)[d]	79	11	1.2	.3	None
Iowa L317 (original)	77	1	2.8	.5	None
Indiana L317 recovered[c]	81	4	3.9	0	None
Kansas K64 (original)(W)	80	2	1.0	3.2	None
Indiana K64 recovered(W)[c]	77	1	1.0	0	None
U.S. CI. 64 (K64 recovered)(W)[d]	79	4	.5	0	None
Other lines: arranged alphabetically by place of origin					
Connecticut C103	76	3	5.0	...	None
Illinois Hy 2	73	0	3.2	1.0	None
Illinois M14	66	10	4.8	...	Moderate
Illinois R4	73	7	4.7	...	None
Illinois R30(W)	71	1	2.2	1.0	None
Illinois R39	75	16	1.1	0	None
Illinois R61	73	4	3.2	3.7	None
Illinois R70	68	0	2.5	1.0	None
Illinois R71A	72	3	4.2	3.5	None
Illinois R72	74	8	3.2	.5	Moderate
Illinois R74	70	1	3.5	2.0	None
Illinois R75	69	13	3.0	.8	None
Illinois R83	73	19	4.2	3.0	Severe
Illinois R84	70	6	3.4	1.0	None
Illinois R89	73	2	4.9	...	None
Illinois R95	74	11	4.0	2.0	None
Illinois R96	74	7	3.0	4.0	None
Illinois R98	73	7	3.9	1.0	None
Illinois R101	72	3	2.9	4.3	None
Illinois R105	73	2	2.2	.8	None

[a] Ratings are based on a score of 0 (no damage) to 5 (all leaves dead). In many instances, premature death of leaves was caused primarily by drouth.

[b] A score of 0 means that in all 6 replications the score was estimated as closer to 0 than to 1 and plants should, in general, be considered to show merely a trace of the disease. Blank spaces mean that leaves had died so prematurely no satisfactory disease readings could be made.

[c] Unreleased line, seed obtained from A. J. Ullstrup, U. S. Dept. Agr. and Purdue Univ.

[d] Unreleased line, seed obtained from M. T. Jenkins, U. S. Dept. of Agr.

(Table is concluded on next page)

Table 4. — URBANA — concluded

Inbred	Days to tasseling	Smutty plants	Leaves dead, Sept. 10[a]	Stewart's leaf blight[b]	Heat scald
		perct.	*score*	*score*	
Illinois R109B	71	8	3.2	.5	None
Illinois R113	68	3	4.4	...	None
Illinois R118	78	24	2.9	2.3	None
Illinois R127	69	14	1.9	1.3	None
Illinois R128	68	14	4.5	...	Moderate
Illinois R129	73	1	2.5	1.0	None
Illinois R154	73	9	4.0	.3	Severe
Illinois 5120B	75	7	2.2	1.0	None
Indiana H21(W)	75	9	3.3	1.5	Moderate
Indiana 33-16(W)	76	0	1.8	1.3	None
Indiana 38-11	76	7	1.5	2.3	None
Indiana WF9	71	17	3.3	1.3	None
Indiana WF9, male sterile T	72	14	3.3	.8	None
Iowa B7	72	5	4.0	1.0	None
Iowa B10	74	2	3.7	3.5	Severe
Iowa B14	71	1	3.3	4.0	Moderate
Iowa I205	66	0	3.0	4.0	None
Iowa L289	71	12	5.0	...	Moderate
Iowa L317	77	1	2.8	.5	None
Iowa OS420	67	3	4.5	...	None
Kansas K4	81	1	.6	.3	None
Kansas K55(W)	71	18	3.2	.8	Moderate
Kansas K64(W)	80	2	1.0	3.2	None
Kansas K155	75	6	.6	.8	None
Kansas K201	78	3	1.2	1.0	None
Kentucky 27(W)	72	5	4.5	...	None
Nebraska N6	70	2	4.4	...	None
Ohio 7	76	0	1.6	1.8	None
Ohio 29	75	12	2.3	1.3	None
Ohio 41	80	1	3.0	1.0	None
Ohio 43	65	3	4.5	.3	None
Ohio 45	65	6	2.5	1.3	None
Ohio 51A	65	4	4.0	.8	None
U.S. CI. 7A	84	3	.8	.5	None
U.S. CI. 21E	79	2	.5	1.3	None
U.S. CI. 49B	81	14	2.5	1.3	None
U.S. CI. 187-2	70	1	4.5	...	Moderate
Wisconsin W8	65	11	4.5	...	None
Wisconsin W22	69	5	3.5	2.3	None
Wisconsin W32	70	10	4.2	...	None

[a] Ratings are based on a score of 0 (no damage) to 5 (all leaves dead). In many instances, premature death of leaves was caused primarily by drouth.

[b] A score of 0 means that in all 6 replications the score was estimated as closer to 0 than to 1 and plants should, in general, be considered to show merely a trace of the disease. Blank spaces mean that leaves had died so prematurely no satisfactory disease readings could be made.

drouth, was not limited to the earliest lines. Among entries for which satisfactory Stewart's leaf blight data could not be obtained were C103 and Ky 27 — inbreds that are adapted from central to southern Illinois.

Stewart's disease readings were based entirely on the abundance of lesions on the leaves, regardless of the amount of general leaf dying. Fortunately there was no Helminthosporium leaf infection to complicate the readings. The development of the

disease for the 2 planting dates was about the same. The data given are an average of the 6 replications. Entries were randomized and the field plots were identified only by row numbers. Eighteen of the inbreds on which readings could be made in 1954 were the same as those tested in 1953.[1] The correlation between the readings for 1953 and 1954 was 0.698, which is highly significant.

In the report of the tests for 1953, a correlation between resistance to Stewart's disease and Northern leaf blight was discussed. Disease resistance to northern leaf blight (*Helminthosporium turcicum*) was observed on inbreds tested on the Station farm in 1951. In 1953 resistance to Stewart's disease was observed on the same inbreds and the correlation between resistance to the two diseases was found to be good. This year more evidence of the relationship between the two was obtained, but in a different manner.

Corn research specialists in the United States Department of Agriculture have been breeding corn for resistance to northern leaf blight. Their method was to cross good cornbelt lines with a resistance line and then backcross to the original cornbelt line, always selecting for resistance to northern leaf blight by the aid of artificial epidemics of the disease. In the 1954 Illinois corn tests, these inbreds resistant to northern leaf blight revealed resistance to Stewart's disease that was superior to the resistance of the original lines (Table 4, first part). These inbreds had not been selected for resistance to Stewart's disease. Breeding for resistance to northern leaf blight, however, did not prove to give any automatic resistance to smut (Table 4).

Smut. Damage from smut was greatest in central and south-central Illinois. The damage for the state as a whole was estimated at a 2 percent loss in yield, the highest since 1940. This estimate was based on examination of 4,700 stalks in 46 scattered counties. The occurrence of the disease was variable, being nearly absent in some fields and extremely high in others. Inbred lines showed striking differences in percentage of smutty plants (Table 4). These differences were fairly consistent for all six replications. It has been shown by others that the inheritance of

[1] 1953 Illinois corn tests. Ill. Bul. 571, p. 11.

resistance to smut is governed by a number of genetic factors and that where inbred lines that differ in amount of smut infection are used in crosses, the amount of smut can be expected to be intermediate between that of the parent lines.

Stalk rots. About twice as much stalk rot infection was observed to be caused by *Diplodia zeae* as by *Gibberella zeae*. Gibberella was especially prevalent in the northern part of the state where, in some fields, it caused much stalk breakage. Although an average of 34 percent of the cornstalks in the state was infected with Diplodia stalk rot, this disease did not cause much lodging in 1954.

Ear rots. The occurrence of ear rot caused by *Fusarium moniliforme* was the highest it has been since 1934. Survey data showed 43 percent of the ears to be infected. Much of this infection was limited to the tip end of the ear, but in some cases the major part of the ear was rotted. This high incidence of *Fusarium* rot came as the follow-up of an exceptional amount of injury by corn earworms.

Ear rot caused by *Diplodia zeae* was nearly normal, causing an average of a little less than 1 percent rotted or discolored kernels. Mechanical damage to the ear by worms has little effect on the amount of Diplodia rot. Rot caused by *Nigrospora oryzae* was above normal in north-central and northern Illinois.

SEED TREATMENT TESTS

The seed used for the 1954 test was grown in 1952. It consisted of the same three hybrids used in the 1953 seed-treatment test. One set of chemical treatments was made in April, 1953, and each kind of treated seed was sealed in a mason jar. Untreated seed of the same kind was stored in tin cans. Both treated and untreated seed was stored in a refrigerator at 40° F. In April, 1954, a similar set of treatments was made, using the untreated stored seed. All the treatments were made by the slurry method. The seed was planted May 6 and the seedlings emerged May 18. Emergence was slow because of cold weather after planting. The soil, however, was moderately dry.

Seven chemicals were used in the tests. Arasan SF-X, Thiram Naugets, Phygon-XL-DDT, and Orthocide 75 are protective

fungicides. The remaining chemicals are combinations of fungicides and insecticides.

Stands showed unusual variability for some entries (Table 5). Yields were little better than half of normal because of drouth damage. On the whole, stands and yields were significantly better for the treated than for the untreated entries. The average increase in yield from treatments made one month before planting was 5.1 bushels (Table 5), or 8.7 percent. On a percentage basis, this increase is fairly close to increases obtained in the years since the experiments have been conducted with commercially processed seed. For the most part, treatments made 13 months before planting gave results similar to those made 1 month before planting.

Among compounds used at two rates of application, only Arasan gave the best results at the higher rate. As Arasan and Thiram

Table 5. — SEED TREATMENT: Increases in Stands and Acre Yields From Treatment With Chemical Protectants

(Composite test of three hybrids, Urbana, 1954)

Treatment	Rate per bushel	Field stand		Acre yield	
	oz.	*perct.*	*increase over check*	*bu.*	*increase over check*
None (check)	...	82.3	...	58.8	...
Treated 1 month before planting					
Arasan SF-X	½	88.7	6.4	63.4	4.6
Arasan SF-X	1	90.8	8.5	70.0	11.2
Thiram Naugets	½	85.7	3.4	65.0	6.2
Thiram Naugets	1	91.7	8.4	63.3	4.5
Phygon-XL-DDT	½	86.3	4.0	65.5	6.7
Phygon-XL-DDT	1	89.6	7.3	60.7	1.9
Orthocide 75	¾	86.9	4.6	62.7	3.9
Orthocide 75	1½	83.3	1.0	59.2	.4
Ortho Seed Guard	1½	90.8	8.5	65.3	6.5
DuPont I & D	1¼	89.6	7.3	64.3	5.5
DuPont Experimental[a]	1½	86.0	3.7	63.0	4.2
Average	...	....	**5.7**	....	**5.1**
Treated 13 months before planting					
Arasan SF-X	½	83.6	1.3	60.4	1.6
Arasan SF-X	1	88.7	6.4	70.6	11.8
Thiram Naugets	½	83.9	1.6	67.3	8.5
Thiram Naugets	1	89.9	7.6	61.7	2.9
Phygon-XL-DDT	½	87.2	4.9	67.9	9.1
Phygon-XL-DDT	1	88.7	6.4	63.3	4.5
Orthocide 75	¾	88.1	5.8	63.8	5.0
Orthocide 75	1½	85.7	3.4	59.7	.9
Ortho Seed Guard	1½	88.4	6.1	67.4	8.6
DuPont I & D	1¼	89.9	7.6	68.6	9.8
DuPont Experimental	1½	87.8	5.5	64.0	5.2
Average	...	....	**5.1**	....	**6.2**

[a] Contains 56.25 percent thiram and 12.5 percent dieldrin. For composition of the other compounds see: 1953 Illinois Corn Tests, Ill. Bul. 571, p. 8.

Naugets contain the same active ingredient, namely thiram, it is surprising that they behaved in an opposite manner with respect to rate of application. The reversal was statistically significant, but the reason for their behavior is not known. Ortho Seed Guard has been tested for the second season and both times produced better results than Orthocide 75, a compound made by the same manufacturer.

MEASURING PERFORMANCE

The entries of the 1954 test are listed in the tables in alphabetical order. It is hoped this arrangement will reduce the emphasis often placed on yield alone.

Yield of grain. To determine shelling percentage, all the ears from one replicate of each entry were shelled immediately after harvest. From the well-mixed shelled corn one sample was taken to determine the percentage of moisture at harvest.[1]

The total acre-yield was calculated as shelled corn containing 15.5 percent moisture, the upper limit allowable in No. 2 corn. The total yield thus obtained for three fields (Galesburg, Urbana, and Brownstown) was adjusted according to the procedure outlined by Cochran for randomized lattice-square designs.[2]

Erect plants. The percentage of erect plants in each plot of each entry on each field was estimated at the time of harvest. Lodging may have been due to rootworm damage, weak or rotted roots, corn borer damage, stalk rots, or weak stalks. Stalks broken above the ear were not considered lodged.

Height of ear. Notes on comparative height of ear were taken at harvest time. Each lot of each entry was placed in one of the five following categories: *low, mid-low* (midway between low and medium), *medium, mid-high* (midway between medium and high), and *high.* Beginning with *low* and continuing progressively to *high,* these terms were assigned numerical values from 1 to 5 to permit the averaging of the plots.

Stand. A count was made in late summer, at all fields, of the number of missing hills and total number of missing plants in each plot of each variety. It is assumed that missing hills were due to some

[1] All moisture determinations were made with a Steinlite moisture tester.

[2] Cochran, W. G. "Some Additional Lattice-Square Designs." *Iowa Agr. Exp. Sta. Res. Bul. 318.* May, 1943.

factor other than the hybrid itself. Yields were corrected for missing hills by the following adjustment:

$$\text{Ear weight in field} \times \left(1 + \frac{\text{missing hills}}{\text{hills present}} \times .6\right) = \text{adjusted ear weight.}$$

The percent stand is based on the total number of missing plants in relation to the number that would have been present if all the kernels had produced plants. Stand differences may be due to poor germination, to disease, insect, or rodent destruction, or in some cases to destruction in cultivation.

Readers are urged to keep in mind these two things when comparing the performance of hybrids on any one field:

1. Small differences in any one year do not necessarily indicate that one hybrid is inherently superior to another. For the amount one hybrid must outyield another before it can be considered better, see the difference-necessary-for-significance figures given at the bottom of these tables. Significance is also given for erect plants, and where applicable, for insect damage and leaf burning. Significance was calculated at the 5-percent level.

2. Tests covering three years (see upper part of yield tables) give more reliable results than those covering only one year. The fact that a hybrid does not appear in the summary is, however, nothing against it — its absence merely means that 1954 was the first year it was tested or that it missed one year of the series.

PEDIGREES OF 28 HYBRIDS

Following is a list of open-pedigree hybrids whose performance is shown in this bulletin.

A.E.S. 702...(C103×M14)(Hy2×WF9)
A.E.S. 805...(C103×Oh45)(WF9×38-11)
Ill. 21.....(Hy2×187-2)(WF9×38-11)
Ill. 101.....(M14×WF9)(187-2×W26)
Ill. 1091.....(Hy2×WF9)(M-14×187-2)
Ill. 1091A....(Hy2×187-2)(M-14×WF9)
Ill. 1246.....(R61×187-2)(WF9×38-11)
Ill. 1277.....(M14×WF9)(I.205×187-2)
Ill. 1337.....(Hy2×R61)(WF9×38-11)
Ill. 1511.....(Hy2×WF9)(38-11×L304A)
Ill. 1559B....(M-14×Oh28)(WF9×Oh51A)
Ill. 1570.....(Hy2×Oh41)(WF9×38-11)
Ill. 1575.....(M14×WF9)(L12×Oh28)
Ill. 1656.....(C103×Hy2)(WF9×38-11)
Ill. 1767....(Hy2×Oh45)(WF9×38-11)
Ill. 1800....(M14×WF9)(A73×A295)
Ill. 1813....(C103×Oh45)(Hy2×WF9)
Ill. 1814....(Hy2×WF9)(M14×Oh45)
Ill. 1831....(WF9×W146)(K237×Oh45)
Ill. 1850....(C103×CI.21E)(38-11×K201)
Ill. 1852....(C103×CI.21E)(38-11×Oh7)
Ill. 1863....(M14×WF9)(I.205×Oh43)
Ill. 1873....(C103×M14)(R75×Oh43)
Ill. 1902....(R138×R142)(R139×R141)
Ill. 6021....(R75×R76)(R84×K4)
Ill. 6075....(R75×R83)(R78×R87)
Ohio-C-92..(Hy2×Oh7)(WF9×3811)
U.S. 13....(Hy×L317)(WF9×38-11)

Table 6. — NORTHERN ILLINOIS: DeKalb[a]

	Total acre yield and planting rate[b]		Moisture in grain at harvest	Erect plants	Stand	Height of ear
	16,000	24,000				
SUMMARY 1952-1954: Less than 5.8 bushels difference between total yields of any two entries is not significant						
	bu.	*bu.*	*perct.*	*perct.*	*perct.*	
Pioneer 347	118.6	.....	20.1	97	92	Medium
Illinois 1091A (Dittmer)	117.2	.....	21.8	98	87	M-high
Pioneer 325	116.0	.....	22.0	98	92	M-low
P.A.G. 277	115.4	.....	20.4	96	88	Medium
Holmes 11A	114.5	.....	19.4	96	89	Medium
Illinois 1277[c]	114.5	.....	21.1	96	88	Medium
Ainsworth X-12	114.5	.....	21.2	98	88	Medium
Pioneer 337	113.1	.....	19.9	96	91	Medium
Sieben 340	112.8	.....	22.8	97	95	High
Huebsch 81	111.9	.....	20.0	95	93	M-low
Funk G-16A	110.8	.....	20.2	96	85	Medium
Holmes 17	110.2	.....	21.5	98	85	Medium
Huebsch 24	108.5	.....	20.0	94	90	Low
Keystone 44	108.4	.....	21.1	98	84	M-low
Funk G-77A	108.0	.....	19.8	97	85	M-high
Tiemann 61	107.7	.....	21.0	98	93	Medium
Frey 425	107.1	.....	22.0	96	88	M-high
Illinois 101 (Huebsch)	107.1	.....	22.5	97	91	Medium
DeKalb 406	107.0	.....	21.6	96	88	Medium
Sieben 440E	106.9	.....	20.8	97	88	Medium
Sieben 450	106.4	.....	20.0	95	87	Medium
Crow 432	106.2	.....	21.8	98	91	M-low
Nichols 5B	104.8	.....	20.1	95	89	Medium
Crow 260	104.2	.....	20.0	97	86	Medium
Sieben 560	103.9	.....	20.1	98	79	Medium
Illinois 1800 (Station)	100.5	.....	19.9	98	89	M-low
Moews 80	87.2	.....	18.0	95	86	Low
Average of all entries	**109.0**	.....	**20.7**	**97**	**88**	.....
1954 RESULTS						
Ainsworth X-12	117.4	110.6	23.6	97	90	Medium
Bear OK-28	117.9	109.0	23.0	85	93	M-low
Bear OK-414	117.3	123.2	22.3	97	86	M-high
Crow 260	106.2	109.1	23.2	95	89	Medium
Crow 402	105.2	112.6	22.4	96	81	Low
Crow 432	111.0	109.2	23.2	96	92	M-low
Crow 487	109.3	113.5	23.4	97	86	Low
DeKalb 248	100.8	100.7	22.0	94	87	M-low
DeKalb 406	100.5	106.5	26.1	94	84	Medium
DeKalb 407	103.6	100.3	22.9	92	94	Medium
DeKalb 455	105.6	105.3	23.2	90	87	M-high
Doubet 25	103.3	106.6	24.6	98	85	High
Doubet 45	114.2	102.3	22.7	96	87	M-high
Frey 410	114.1	115.7	22.6	98	96	Low
Frey 425	111.1	108.8	23.4	93	93	High
Funk G-16A	108.2	108.4	23.5	93	87	Medium
Funk G-77A	106.9	109.4	21.6	98	74	M-high

[a] Data shown for moisture, erect plants, stand, and ear height recorded in 16,000 plant population.
[b] Planting rate refers to number of kernels planted per acre (16,000 = 4 kernels per hill, 24,000 = 6 kernels per hill).
[c] Average of Illinois 1277 (Station) 1952, Illinois 1277 (Huebsch) 1953, Illinois 1277 (Nichols) 1954.

(Table is concluded on next page)

Table 6. — NORTHERN ILLINOIS: DeKalb — concluded

	Total acre yield and planting rate[a]		Moisture in grain at harvest	Erect plants	Stand	Height of ear
	16,000	24,000				
1954 RESULTS — concluded						
	bu.	*bu.*	*perct.*	*perct.*	*perct.*	
Holmes 11A	116.8	117.1	21.4	94	92	Medium
Holmes 17	98.7	102.8	22.9	96	77	Low
Huebsch 16	108.1	104.2	22.9	98	79	M-low
Huebsch 24	104.7	110.9	23.1	94	88	Low
Huebsch 81	107.6	115.2	22.8	94	88	M-low
Hulting 238	118.9	121.0	22.2	93	93	Low
Hulting 240	110.0	107.8	23.7	93	89	M-low
Hulting 241	105.1	105.3	22.1	91	80	Low
Illinois 101 (Huebsch)	102.2	118.4	26.4	95	85	Medium
Illinois 1091A (Dittmer)	113.8	110.3	23.5	96	89	M-high
Illinois 1277 (Nichols)	110.9	116.5	23.7	93	84	Medium
Illinois 1559B (Nichols)	106.5	103.9	22.6	95	89	M-low
Illinois 1575 (Station)	114.4	98.1	24.8	94	93	M-high
Illinois 1800 (Station)	96.9	101.2	22.1	96	93	M-low
Illinois 1863 (Station)	118.5	111.8	23.5	98	95	Low
Illinois 1902 (Station)	128.5	123.3	24.2	91	95	M-high
Keystone 44	109.9	111.6	24.1	97	77	M-low
Lowe 315	80.3	90.3	22.9	96	63	Low
Lowe 355	85.4	89.5	22.2	96	78	Low
Lowe 414R	100.5	103.6	22.1	93	85	Medium
Lowe 424	75.1	82.7	22.4	98	72	Medium
Moews 14	109.1	103.0	23.4	91	86	Medium
Moews 14E	104.0	106.5	22.4	96	89	Medium
Moews 14EE	101.9	109.5	22.5	93	90	Low
Moews 15	104.5	108.2	21.2	95	75	M-high
Moews 80	86.0	87.1	20.7	90	90	Low
Moews 85	81.8	99.1	21.9	96	71	Low
Moews 86	99.0	107.1	20.6	97	89	Low
Munson 5	116.7	120.3	23.7	93	90	Medium
Munson 77	109.9	102.2	23.7	96	80	M-high
Nichols 5B	106.8	109.1	23.4	94	84	Medium
Nichols 75A	115.0	116.3	22.5	96	89	Medium
P.A.G. 234	110.4	122.8	22.5	94	94	M-high
P.A.G. 244	115.5	119.6	22.6	94	92	Medium
P.A.G. 253	114.8	114.4	23.0	91	91	Medium
P.A.G. 277	116.7	111.1	22.8	95	94	Medium
P.A.G. 303	107.9	107.2	23.1	95	88	M-low
P.A.G. 7220	109.1	124.5	25.8	97	88	Medium
Pioneer 325	116.5	120.5	23.3	97	91	Medium
Pioneer 337	112.2	118.0	22.2	92	94	Medium
Pioneer 347	121.9	106.0	22.7	95	90	Medium
Pioneer 354	115.8	123.8	22.5	98	88	M-high
Producers 311	99.2	104.6	25.5	97	84	M-low
Producers 314	111.3	100.1	22.8	92	94	M-low
Producers 315	103.4	110.2	23.7	94	87	Medium
Producers 320	100.5	104.7	21.4	95	81	M-high
Producers 326	113.1	109.7	22.4	97	91	M-low
Producers 510	118.7	109.1	22.8	96	91	M-high
Schwenk 17	110.2	99.5	24.3	96	94	Medium
Sieben 340	124.7	103.6	21.9	94	93	High
Sieben 440E	108.3	111.1	23.3	95	88	Medium
Sieben 450	102.8	105.0	22.1	96	81	Medium
Sieben 560	105.5	109.6	23.4	99	79	Medium
Southern States Pocahontas	98.3	102.7	23.7	96	77	High
Stewart 56	113.1	111.4	23.8	93	91	M-high
Stiegelmeier 379	110.8	114.6	22.4	89	86	Low
Super-Crost 440	107.9	106.9	23.6	96	83	Low
Tiemann 61	105.9	108.4	22.4	98	92	Medium
Average of all entries	**107.7**	**108.6**	**23.0**	**95**	**87**	.....
Difference necessary for significance	**7.9**	**8.6**	....	**3**	..	.....

[a] Planting rate refers to number of kernels planted per acre (16,000 = 4 kernels per hill, 24,000 = 6 kernels per hill.

Table 7. — WEST NORTH-CENTRAL ILLINOIS: Galesburg[a]

Entry	Total acre yield	Moisture in grain at harvest	Erect plants	Stand	Height of ear
SUMMARY 1952-1954: Less than 6.5 bushels difference between total yields of any two entries is not significant					
	bu.	*perct.*	*perct.*	*perct.*	
Pioneer 313B	110.8	19.8	75	91	M-high
Holmes 39	108.1	20.3	86	87	M-high
Munson 5	105.0	18.6	85	90	M-low
Schwenk 24	105.0	18.8	86	92	M-high
Schwenk 34	105.0	18.9	91	92	M-high
Ainsworth X-21	103.8	18.4	87	92	M-high
U.S. 13[b]	103.4	19.4	83	92	High
Crow 407	103.3	18.6	90	90	Low
Bruns P-37	101.9	19.3	83	89	M-high
Illinois 1570[c]	101.4	18.3	85	91	M-high
Funk G-95	101.2	19.0	86	84	M-high
Ainsworth X-13-3	100.9	20.4	86	88	High
Bear OK-24	100.7	20.4	86	92	Medium
P.A.G. 303	99.9	18.9	90	94	Low
Illinois 21 (Dittmer)	99.8	19.1	90	89	M-high
DeKalb 847	98.9	19.5	88	90	M-high
Huey 23	98.7	18.7	87	89	M-high
Morton 70	98.6	19.0	86	91	M-high
Sieben 340	96.9	17.2	86	90	Medium
Doubet 43	96.7	19.1	91	89	Medium
P.A.G. 392	96.3	17.4	89	86	Medium
Crow 608	95.2	18.4	87	86	Medium
Huey 235	94.2	19.3	89	91	M-high
Lowe 514	94.1	19.1	86	88	Medium
Stewart 51	94.0	19.8	90	91	M-high
Doubet 25	93.9	18.5	92	87	Medium
Huey 42	92.2	18.7	87	89	M-high
Tiemann 61	89.9	18.1	85	91	Low
Average of all entries	**99.6**	**19.0**	**87**	**90**	.....
1954 RESULTS					
A.E.S. 702 (Mountjoy)	91.9	24.0	92	93	Medium
Ainsworth X-13-3	104.6	22.4	92	87	High
Ainsworth X-14-3	102.9	22.8	94	90	M-high
Ainsworth X-21	97.2	23.3	95	91	M-high
Bear OK-20	99.3	22.6	96	89	Medium
Bear OK-24	87.7	23.5	92	93	Medium
Bruns P-37	101.0	22.4	91	90	Medium
Crow 402	81.0	20.3	96	79	Low
Crow 407	99.1	23.4	98	88	Low
Crow 608	86.1	23.1	94	83	M-low
DeKalb 628A	88.8	23.9	92	87	M-high
DeKalb 817A	86.2	22.2	95	90	Medium
DeKalb 825	84.4	24.1	97	89	M-low
DeKalb 837	86.2	24.3	94	89	M-high
DeKalb 847	101.1	22.9	95	92	M-high
Doubet 25	80.3	21.9	96	83	Low
Doubet 42	80.7	22.8	95	88	Medium
Doubet 43	88.9	22.8	94	92	Medium
Funk G-95	101.4	23.3	94	87	M-high
Funk G-95A	110.2	22.4	93	85	Medium
Griffith 129	99.6	23.4	92	89	High

[a] See Table 3 for variety reaction to corn borer.
[b] Average of U.S. 13 (Morton) 1952, U.S. 13 (Stone) 1953, U.S. 13 (Graham) 1954.
[c] Average of Illinois 1570 (Station) 1952, 1953, Illinois 1570 (Graham) 1954.

(Table is concluded on next page)

Table 7. — WEST NORTH-CENTRAL ILLINOIS: Galesburg — concluded

Entry	Total acre yield	Moisture in grain at harvest	Erect plants	Stand	Height of ear
1954 RESULTS — concluded					
	bu.	*perct.*	*perct.*	*perct.*	
Holmes 21A	106.3	21.8	93	93	Medium
Holmes 39	114.8	24.4	93	90	High
Holmes 46	102.4	23.3	94	88	Medium
Huey 23	99.0	23.3	94	92	M-high
Huey 42	92.3	21.0	93	90	Medium
Huey 235	95.0	21.8	91	92	M-high
Hulting 102	97.9	24.1	96	92	M-low
Hulting 241	85.8	21.8	94	89	Low
Illinois 21 (Dittmer)	95.2	24.8	95	90	High
Illinois 1091 (Mountjoy)	84.0	21.9	95	78	Low
Illinois 1337 (Dittmer)	93.6	24.0	92	84	Medium
Illinois 1570 (Graham)	89.6	20.9	96	90	M-high
Illinois 1814 (Station)	99.8	23.0	98	93	M-low
Illinois 1831 (Station)	105.7	23.7	96	94	Medium
Illinois 1873 (Station)	86.1	22.8	98	91	Medium
Lowe 514	92.9	22.4	94	90	M-high
Lowe 523	93.8	22.3	92	86	M-high
Lowe 530	103.0	24.1	94	86	High
Moews 520	104.3	24.6	95	88	High
Moews 523	91.6	22.9	96	82	M-high
Moews 524	100.0	22.3	95	92	M-high
Moews 550	88.6	24.2	96	84	High
Morton 12A	76.9	24.7	95	83	Medium
Morton 70	95.3	20.8	94	87	M-low
Morton 303	90.8	23.7	95	88	M-high
Mountjoy 114	98.9	23.6	95	88	M-high
Munson 5	104.9	22.1	94	92	Medium
Munson 77	96.5	20.9	93	91	M-high
Munson 119	90.1	21.0	90	87	M-low
Null 68	83.9	22.8	90	79	Medium
Null 83	100.6	24.5	94	83	High
P.A.G. 303	90.0	22.0	96	91	M-low
P.A.G. 347	94.1	22.1	93	91	M-low
P.A.G. 383	101.6	22.2	96	91	M-low
P.A.G. 392	91.3	20.8	92	91	M-high
P.A.G. 403	100.0	23.7	96	91	M-high
Pioneer 313B	116.7	24.5	86	90	High
Pioneer 345	97.0	21.6	94	92	M-low
Pioneer X0101	102.3	21.0	96	89	Medium
Pioneer 6063	109.6	24.2	93	96	Medium
Pioneer 9212	104.9	23.6	96	95	High
Producers 13-1	97.7	24.8	93	90	M-high
Producers 525	85.7	21.4	92	87	Low
Producers 900	93.3	24.2	91	92	Medium
Producers 940	97.6	23.8	95	88	M-high
Robe 20	97.1	24.0	94	97	High
Schwenk 24	104.7	22.4	91	91	High
Schwenk 27	95.4	24.2	96	89	M-high
Schwenk 34	104.5	22.2	96	91	M-high
Sieben 320	92.1	21.8	92	92	M-low
Sieben 340	94.9	20.8	89	89	Medium
Sieben 360	84.9	22.5	92	84	Medium
Stewart 51	88.5	24.4	94	90	Medium
Stewart 60	89.5	23.9	97	90	M-high
Stiegelmeier 300	87.7	22.6	89	87	M-low
Stiegelmeier 301	88.0	22.6	89	88	M-high
Stiegelemier 379	90.0	22.1	91	84	M-low
Tiemann 61	85.3	20.6	95	91	Low
Tiemann 78	112.3	22.3	92	94	Medium
U.S. 13 (Graham)	106.6	23.6	89	86	High
Average of all entries	**95.2**	**22.9**	**94**	**89**	.....
Difference necessary for significance	**11.4**	....	**5**	..	.....

Table 8. — CENTRAL ILLINOIS: Urbana

Entry	Total acre yield	Moisture in grain at harvest	Erect plants	Stand	Height of ear	Dropped[a] ears
SUMMARY 1952-1954: Less than 5.7 bushels difference between total yields of any two entries is not significant						
	bu.	*perct.*	*perct.*	*perct.*		*perct.*
Funk G-95	112.8	16.1	95	91	M-high	...
Schwenk 24	111.4	17.0	94	96	M-high	...
Canterbury 400	111.3	16.3	97	94	M-high	...
Holmes 39	110.7	18.3	94	94	Medium	...
Morton 70	110.3	16.7	94	96	M-high	...
Holmes 13	109.6	17.6	97	96	M-high	...
Pioneer 302	109.6	18.7	92	96	M-high	...
U.S. 13[b]	109.3	16.3	93	95	High	...
Ainsworth X-13-3	108.7	16.9	92	95	High	...
P.A.G. 173	108.3	16.7	95	93	High	...
Ainsworth X-14-3	108.0	16.1	93	95	M-high	...
Munson 119	107.8	17.0	95	95	M-high	...
Tiemann 72	107.7	16.0	96	94	M-high	...
Frey 645	107.7	16.3	93	95	M-high	...
Funk G-91	107.7	17.6	96	91	M-high	...
Munson 13	107.6	16.4	94	91	M-high	...
Canterbury 420	107.6	17.2	96	94	M-high	...
Pioneer 6063	106.9	17.7	95	94	M-low	...
Pioneer 313B	106.3	16.7	92	96	Medium	...
Illinois 1570[c]	105.6	16.4	92	95	M-high	...
Doubet 43	105.3	17.4	98	93	Medium	...
Trisler 32B	104.4	17.8	97	90	Medium	...
Crow 608	104.1	16.0	96	92	Medium	...
A.E.S. 805[d]	103.7	17.6	97	96	M-low	...
Whisnand 804	103.6	18.1	96	94	High	...
Illinois 21[e]	103.4	15.9	97	93	Medium	...
Illinois 1246 (Mountjoy)	103.1	15.9	95	96	M-low	...
Lowe 523	102.8	16.0	94	95	Medium	...
Whisnand 810	102.8	17.5	95	92	M-high	...
Canterbury 404	101.3	15.6	96	92	Medium	...
Frey 692	100.8	16.5	96	93	Medium	...
DeKalb 847	100.5	16.0	97	95	M-high	...
Trisler 32	99.9	16.8	97	89	M-low	...
DeKalb 628A	99.5	16.3	95	93	Medium	...
Doubet 41	98.8	16.7	95	87	M-high	...
DeKalb 875	98.2	17.7	95	91	Medium	...
P.A.G. 392	97.5	16.0	97	89	Medium	...
Keystone 48	97.0	16.2	93	92	M-low	...
Lowe 520	95.5	16.8	97	92	Medium	...
Average of all entries	**105.0**	**16.8**	**95**	**93**	.....	...

[a] Ear dropping resulting from attack by European corn borer.
[b] Average of U.S. 13 (Morton) 1952, U.S. 13 (Stone) 1953, 1954.
[c] Average of Illinois 1570 (Stone) 1952, 1953, and Illinois 1570 (Mountjoy) 1954.
[d] Average of A.E.S. 805 (Station) 1952, A.E.S. 805 (Stone) 1953, 1954.
[e] Average of Illinois 21 (Stone) 1952, Illinois 21 (Mountjoy) 1953, 1954.

(Table is continued on next page)

Table 8. — CENTRAL ILLINOIS: Urbana — continued

Entry	Total acre yield	Moisture in grain at harvest	Erect plants	Stand	Height of ear	Dropped[a] ears
1954 RESULTS						
	bu.	*perct.*	*perct.*	*perct.*		*perct.*
A.E.S. 702 (Graham)	97.9	19.5	95	92	M-low	3.8
A.E.S. 805 (Stone)	101.3	19.6	96	94	M-low	5.9
Ainsworth X-13-3	111.2	18.3	92	96	High	3.1
Ainsworth X-14-3	107.5	18.8	94	96	M-high	2.6
Appl 130	112.2	18.6	98	92	M-high	2.2
Appl 159	116.6	19.8	94	94	High	3.2
Bear OK-25	86.0	20.7	94	90	Medium	.6
Bear OK-60	102.4	20.9	93	96	M-high	1.0
Bear OK-69	111.2	19.3	93	87	High	1.1
Bear OK-72	103.4	19.6	94	97	Medium	.5
Canterbury 400	110.1	18.8	97	96	Medium	3.6
Canterbury 404	100.8	18.2	96	93	Medium	4.3
Canterbury 420	110.7	19.8	98	94	Medium	2.7
Crow 608	101.1	18.7	94	95	M-low	3.2
Crow 638	101.2	18.8	96	92	M-low	4.9
Crow 825	112.0	19.0	96	91	Medium	.5
DeKalb 628A	101.5	18.2	95	96	Medium	2.6
DeKalb 817A	101.9	18.2	96	96	Medium	1.0
DeKalb 837	94.0	19.6	97	88	Medium	1.1
DeKalb 847	101.5	18.4	97	96	M-high	.5
DeKalb 875	96.3	19.5	96	86	Medium	5.2
Doubet 41	103.6	19.2	97	94	Medium	1.6
Doubet 43	96.6	19.8	97	88	Medium	12.6
Frey 645	103.5	19.5	97	96	M-high	4.7
Frey 692	109.2	19.3	95	96	M-high	2.1
Frey 892	97.4	19.8	97	93	High	0
Funk G-91	107.4	20.9	97	94	M-high	4.8
Funk G-95	115.3	19.2	95	95	M-high	3.2
Funk G-95A	106.1	19.8	95	94	Medium	2.7
Holmes 13	111.3	20.0	96	97	High	8.2
Holmes 39	115.4	20.6	93	96	Medium	1.0
Illinois 21 (Mountjoy)	101.7	18.2	96	94	Medium	6.4
Illinois 1246 (Mountjoy)	101.4	18.8	95	95	Low	4.7
Illinois 1570 (Mountjoy)	104.1	18.8	94	94	M-high	5.3
Illinois 1767 (Station)	92.0	20.0	95	96	High	3.1
Illinois 1813 (Station)	88.2	19.4	97	95	Medium	2.1
Illinois 6021 (Station)	105.4	20.4	92	95	High	3.7
Illinois 6075 (Station)	88.7	19.6	93	94	M-low	2.7
Keystone 38A	101.9	19.8	94	91	Medium	2.2
Keystone 48	89.8	18.2	91	93	Medium	0
Lowe 520	92.5	18.9	97	93	M-low	9.2
Lowe 523	101.3	18.6	95	94	Medium	7.0
Lowe 530	102.5	20.4	94	94	M-high	4.8

[a] Ear dropping resulting from attack by European corn borer.

(Table is concluded on next page)

Table 8. — CENTRAL ILLINOIS: Urbana — concluded

Entry	Total acre yield	Moisture in grain at harvest	Erect plants	Stand	Height of ear	Dropped[a] ears
1954 RESULTS — concluded						
	bu.	*perct.*	*perct.*	*perct.*		*perct.*
Moews 520	106.1	18.2	97	94	Medium	6.4
Moews 523	97.0	19.4	94	92	M-low	9.3
Moews 524	89.2	19.2	95	92	Medium	7.7
Morton 12A	81.1	19.5	97	94	M-high	3.2
Morton 70	112.0	18.2	95	97	M-high	5.7
Munson 13	111.1	19.2	96	97	M-high	6.2
Munson 119	107.5	19.5	96	97	Medium	3.6
Ohio C-92 (Nickel)	110.3	18.9	96	95	Medium	3.2
P.A.G. 173	110.5	19.7	96	96	High	6.3
P.A.G. 351	97.2	18.9	95	95	Low	3.2
P.A.G. 383	103.9	18.9	95	95	Low	2.6
P.A.G. 392	94.9	18.9	97	94	M-low	2.7
P.A.G. 403	101.9	20.6	96	94	M-low	3.2
Pioneer 302	109.7	20.4	95	95	M-high	5.3
Pioneer 313B	106.9	18.2	91	96	M-low	.5
Pioneer 6063	100.7	19.8	95	92	Low	3.3
Pioneer 6727	109.0	19.5	87	95	Medium	.5
Pioneer 9212	107.9	19.8	98	94	Medium	2.1
Producers 13-1	111.2	19.5	96	95	M-high	5.3
Producers 730	99.0	19.2	95	91	M-high	1.1
Producers 900	93.9	18.5	95	93	M-low	6.5
Producers 940	106.1	18.7	96	94	M-low	2.1
Producers 946	88.2	19.2	97	96	M-high	5.2
Schwenk 24	111.1	19.1	94	95	Medium	5.8
Schwenk 27	105.1	19.5	97	95	M-high	1.6
Southern States Pocahontas	91.7	19.9	96	81	M-low	.6
Stiegelmeier 301	98.8	19.6	94	91	Medium	2.2
Stiegelmeier 400	88.7	18.6	91	90	Low	2.8
Super-Crost 660	88.1	19.0	96	94	M-low	6.9
Tiemann 72	111.2	18.4	94	97	M-high	5.2
Tiemann 78	102.5	18.9	97	94	M-low	4.8
Trisler 32	106.7	19.2	96	95	M-low	1.6
Trisler 32B	100.8	19.6	96	87	Medium	1.7
Trisler 33A	108.6	19.4	95	94	Medium	5.9
U.S. 13 (Stone)	109.0	19.3	94	94	High	5.9
Whisnand 419	94.7	19.4	95	95	M-low	1.1
Whisnand 804	107.7	19.6	96	94	High	3.2
Whisnand 810	98.4	20.1	96	89	Medium	5.1
Average of all entries	**102.4**	**19.3**	**95**	**94**	.....	**3.6**
Difference necessary for significance	**8.2**	....	**4**	..	.....	**4.2**

[a] Ear dropping resulting from attack by European corn borer.

Table 9. — SOUTHERN ILLINOIS: Brownstown

Entry	Total acre yield	Moisture in grain at harvest	Erect plants[a]	Stand	Height of ear	Leaf burning[b]
SUMMARY 1952-1954: Less than 3.7 bushels difference between total yields of any two entries is not significant						
	bu.	*perct.*	*perct.*	*perct.*		*perct.*
Trisler 33A	61.4	14.1	92	90	Medium	...
Ainsworth X-14-3	60.1	14.0	95	91	Medium	...
Bruns P-38	58.7	13.6	94	92	Medium	...
Illinois 1570[c]	58.4	14.4	91	90	Medium	...
U.S. 13[d]	58.1	14.0	93	93	M-high	...
Bear OK-72B	58.1	14.1	93	97	M-low	...
Ainsworth X-13-3	58.0	14.0	95	94	M-high	...
P.A.G. 403	57.7	14.0	93	94	M-low	...
Munson 119	57.6	14.3	94	92	Medium	...
Canterbury 420	56.9	13.1	91	94	M-low	...
Moews CB 60A	56.6	15.1	90	90	Medium	...
Bear OK-50A	56.4	14.9	96	93	M-low	...
Funk G-91	55.9	15.2	96	89	Medium	...
Haudrich 13	55.7	14.2	94	96	Medium	...
Canterbury 126	55.6	13.0	93	92	Medium	...
Munson 15	55.6	14.0	95	94	Medium	...
Pioneer 6727	55.4	14.0	93	96	M-high	...
Pioneer 302	54.7	15.0	91	94	Medium	...
Doubet 43	54.6	14.6	93	88	M-low	...
Tiemann 72	54.2	13.8	96	95	M-low	...
P.A.G. 383	54.1	13.8	91	90	M-low	...
Crow 805	53.8	13.5	93	90	Medium	...
Illinois 1656 (Mountjoy)	53.5	13.7	94	91	Medium	...
Haudrich 126	53.4	14.3	89	91	M-low	...
Canterbury 400	53.3	15.6	94	95	Medium	...
Whisnand 810	52.6	14.2	94	90	Medium	...
A.E.S. 805	52.5	15.5	91	90	Medium	...
Whisnand 851	52.3	16.2	94	91	Medium	...
P.A.G. 631(W)	50.9	17.1	85	93	M-high	...
Haudrich 784	50.8	18.2	93	91	High	...
Lowe 523	50.3	15.1	95	90	M-low	...
Moews CB 70A	50.2	13.3	94	90	M-low	...
Doubet 41	49.7	14.5	94	89	Medium	...
P.A.G. 620(W)	49.4	17.7	90	90	M-high	...
Funk G-134	48.7	18.2	95	90	M-high	...
Average of all entries	**54.7**	**14.7**	**93**	**93**	.....	...
1954 RESULTS						
A.E.S. 805 (Graham)	31.6	14.5	83	85	Medium	3.5
Ainsworth X-13-3	40.7	14.0	93	89	M-high	2.0
Ainsworth X-14-3	41.1	15.6	93	87	M-low	2.2
Appl 159	38.4	16.2	81	93	M-low	3.6
Bear OK-50A	37.5	15.0	93	93	M-low	2.6
Bear OK-60	40.8	16.8	84	93	Medium	2.8
Bear OK-72B	40.8	15.1	87	98	M-low	4.8
Bruns P-38	42.5	14.0	90	86	M-high	2.0
Canterbury 126	39.7	14.1	91	87	Medium	4.0
Canterbury 400	39.9	13.3	90	91	Medium	3.4
Canterbury 420	42.1	14.0	84	90	Low	2.0
Crow 805	40.8	14.9	88	84	M-low	3.2
Crow 825	38.1	13.7	93	87	M-high	1.5

[a] Two-year average, 1953, 1954.

[b] Leaf burning notes taken July 30 just prior to tasseling and following temperatures of 116 degrees and hot winds. Scale: 1—no leaf burning; 2—2.9 burned leaves present in 10-35 percent of hills; 3—3.9 burned leaves present in 35-50 percent of hills; 4—4.9 burned leaves present in 60-85 percent of hills.

[c] Average of Illinois 1570 (Mountjoy) 1952, Illinois 1570 (Bruns) 1953, 1954.

[d] Average of U.S. 13 (Morton) 1952, U.S. 13 (Bruns) 1953, U.S. 13 (Graham) 1954.

(Table is continued on next page)

Table 9. — SOUTHERN ILLINOIS: Brownstown — continued

Entry	Total acre yield	Moisture in grain at harvest	Erect plants[a]	Stand	Height of ear	Leaf burning[b]
1954 RESULTS — continued						
	bu.	*perct.*	*perct.*	*perct.*		*perct.*
DeKalb 817A	37.0	13.8	85	89	M-low	4.1
DeKalb 837	38.2	16.3	89	85	Medium	2.8
DeKalb 847	32.7	14.9	89	94	Medium	4.1
DeKalb 875	35.8	13.7	87	86	Medium	3.8
DeKalb 910(W)	30.8	14.9	72	91	Medium	3.6
DeKalb 925(W)	29.6	16.4	84	92	Medium	3.4
Doubet 41	34.4	14.0	91	91	M-low	3.4
Doubet 42	32.6	14.6	91	83	M-low	3.2
Doubet 43	36.5	14.7	88	80	Medium	3.3
Embro 101	37.1	17.8	79	85	High	1.8
Funk G-91	39.6	14.7	92	83	Medium	2.7
Funk G-134	33.5	17.6	91	80	Medium	4.0
Haudrich 10(W)	23.5	14.9	93	78	Medium	2.2
Haudrich 13	42.1	15.7	89	95	Medium	2.9
Haudrich 21	37.6	14.2	84	93	M-low	3.7
Haudrich 126	36.3	14.4	81	85	Medium	3.6
Haudrich 784	40.8	17.3	90	86	High	1.9
Huey 23	36.5	15.5	86	80	High	2.8
Huey 50	39.5	15.8	93	91	Medium	2.5
Huey 106	41.5	14.6	92	87	M-low	1.7
Illinois 1511 (Appl)	36.3	14.7	92	91	M-high	3.3
Illinois 1570 (Bruns)	45.0	15.1	87	83	Medium	2.1
Illinois 1656 (Mountjoy)	38.9	15.2	89	87	Medium	2.1
Illinois 1850 (Station)	38.6	17.2	98	85	High	2.6
Illinois 1852 (Station)	42.9	17.7	93	93	High	1.9
Keystone 38A	35.0	15.0	90	87	M-high	3.5
Keystone 107(W)	26.1	17.9	86	86	High	2.6
Lowe 523	35.3	13.5	93	87	M-low	3.8
Lowe 530	40.8	15.3	82	84	Medium	2.2
Lowe 833	36.7	15.4	90	85	Medium	3.5
Moews 523	41.1	14.7	92	82	M-low	2.4
Moews 535	35.0	15.0	87	86	Medium	3.9
Moews CB 60A	38.2	15.8	81	87	Medium	3.6
Moews CB 70A	31.3	13.8	89	81	Low	4.0
Morton 12A	32.1	14.2	92	79	Medium	3.1
Morton 303	36.9	14.7	81	89	M-low	2.9
Munson 15	39.8	13.7	91	92	Low	4.0
Munson 119	41.3	14.5	88	88	Medium	2.6
P.A.G. 173	38.6	13.7	91	88	M-high	3.4
P.A.G. 383	37.3	14.9	86	81	M-low	3.3
P.A.G. 403	40.7	15.8	87	91	Low	2.9
P.A.G. 486	29.3	22.0	76	92	High	2.1
P.A.G. 620(W)	31.2	17.1	81	87	M-high	2.0
P.A.G. 631(W)	32.0	14.2	76	87	M-high	2.6
Pioneer 300	37.6	14.0	89	91	M-low	3.6
Pioneer 302	39.2	15.1	85	91	Medium	2.6
Pioneer 313B	44.3	14.4	90	93	Low	4.4
Pioneer 332	40.5	17.0	84	93	Medium	2.5
Pioneer 6727	37.8	14.2	89	91	M-low	4.9
Pioneer 9212	35.6	15.0	95	86	Medium	4.2
Producers 13-1	40.8	16.0	91	93	Medium	2.2
Producers 946	36.3	14.0	93	87	Medium	4.1
Producers 1018	40.9	14.6	93	88	M-high	2.3
Producers 1022	38.4	16.2	85	96	Medium	3.6
Producers 1050	35.1	13.7	89	87	Medium	3.5

[a] Two-year average, 1953, 1954.

[b] Leaf burning notes taken July 30 just prior to tasseling and following temperatures of 116 degrees and hot winds. Scale: 1—no leaf burning; 2—2.9 burned leaves present in 10-35 percent of hills; 3—3.9 burned leaves present in 35-50 percent of hills; 4—4.9 burned leaves present in 60-85 percent of hills.

(Table is concluded on next page)

Table 9. — SOUTHERN ILLINOIS: Brownstown — concluded

Entry	Total acre yield	Moisture in grain at harvest	Erect plants[a]	Stand	Height of ear	Leaf burning[b]
1954 RESULTS — concluded						
	bu.	*perct.*	*perct.*	*perct.*		*perct.*
Southern States Mohawk	32.9	14.2	86	76	Low	3.0
Southern States Potomac	34.9	14.6	73	91	Medium	1.5
Stiegelmeier 600	28.1	16.2	88	80	Medium	3.7
Super-Crost 880	31.5	14.9	89	86	Medium	3.6
Tiemann 72	36.0	14.6	93	93	Medium	4.0
Tiemann 78	40.6	13.9	93	91	M-low	3.6
Trisler 32B	39.9	16.4	91	83	Medium	2.3
Trisler 33A	41.9	15.5	86	83	M-high	2.2
Trisler 33B	36.0	15.3	92	71	Medium	2.7
U.S. 13 (Graham)	40.5	13.6	83	87	M-high	2.2
Whisnand 810	38.1	15.0	91	83	Medium	3.7
Whisnand 830	42.1	16.2	90	85	Medium	3.4
Whisnand 851	37.5	17.8	89	87	Medium	1.7
Average of all entries	**37.2**	**15.2**	**88**	**87**	.....	**3.0**
Difference necessary for significance	**4.8**	....	**10**	..	.....	**.9**

[a] Two-year average, 1953, 1954.

[b] Leaf burning notes taken July 30 just prior to tasseling and following temperatures of 116 degrees and hot winds. Scale: 1—no leaf burning; 2—2.9 burned leaves present in 10-35 percent of hills; 3—3.9 burned leaves present in 35-50 percent of hills; 4—4.9 burned leaves present in 60-85 percent of hills.

Table 10. — EXTREME SOUTHERN ILLINOIS: Ridgway 1952, 1953, Eldorado 1954

Entry	Total average yield	Moisture in grain at harvest	Erect plants	Stand	Height of ear	Rootworm injury, plants elbowed[a]
SUMMARY 1952-1954: Less than 4.8 bushels difference between total yields of any two entries is not significant						
	bu.	*perct.*	*perct.*	*perct.*		*perct.*
Pioneer 6727	79.3	16.8	94	92	Medium	....
Funk G-711	73.5	19.3	95	89	High	....
Pioneer 302	72.9	17.7	97	90	M-high	....
Ainsworth X-14A	71.0	15.8	96	86	Medium	....
Moews CB 69A	70.8	16.6	96	88	M-high	....
Tiemann 78	70.7	14.5	97	90	M-low	....
Moews CB 60A	68.7	15.4	97	86	Medium	....
P.A.G. 486	67.8	20.7	92	88	High	....
Crow 805	67.6	14.3	98	84	M-low	....
P.A.G. 484	67.3	19.1	97	91	High	....
P.A.G. 620(W)	67.0	16.9	97	84	High	....
Moews CB 90A	66.3	16.3	97	86	Medium	....
Haudrich 13	65.9	14.9	98	91	Medium	....
Haudrich 126	64.2	15.0	97	82	Medium	....
Whisnand 851	63.6	16.9	98	87	Medium	....
Whisnand 917(W)	62.7	16.1	97	85	High	....
Haudrich 10(W)	62.5	15.3	97	87	High	....
Whisnand 834	61.4	16.5	97	83	Medium	....
Doubet 41	59.7	14.2	98	84	Medium	....
Keystone 107(W)	55.1	18.9	98	81	High	....
Doubet 43	53.1	14.8	97	82	Medium	....
Super-Crost 880	49.6	14.7	98	83	Low	....
Average of all entries	**65.4**	**16.4**	**97**	**86**	.....	....

[a] Elbowing at lower nodes following attack by corn rootworm (*Diabrotica* spp.) and windstorms in June.

(Table is concluded on next page)

Table 10. — EXTREME SOUTHERN ILLINOIS: Ridgway 1952, 1953, Eldorado 1954 — concluded

Entry	Total average yield	Moisture in grain at harvest	Erect plants	Stand	Height of ear	Rootworm injury, plants elbowed[a]
1954 RESULTS						
	bu.	*perct.*	*perct.*	*perct.*		*perct.*
A.E.S. 805 (Graham)	67.2	15.9	98	93	M-low	26.2
Ainsworth X-14A	74.3	17.4	96	91	Medium	17.7
Bear OK-69A	77.3	15.8	91	92	M-low	62.0
Bear OK-72	76.3	16.0	94	95	M-low	50.9
Crow 805	77.4	15.6	98	92	M-low	21.8
Crow 825	76.1	16.5	96	94	Medium	14.1
DeKalb 837	68.9	16.0	96	91	Low	45.7
DeKalb 847	71.9	15.3	99	95	Medium	10.5
DeKalb 875	75.2	16.8	98	94	Medium	5.3
DeKalb 898	74.2	16.0	97	94	M-high	15.9
DeKalb 910(W)	57.5	17.4	96	91	M-high	33.5
DeKalb 925(W)	75.6	20.6	97	97	M-high	34.9
Doubet 41	76.0	15.7	97	91	M-low	37.2
Doubet 42	64.8	17.8	98	92	M-low	13.3
Doubet 43	59.1	17.3	98	90	M-low	24.1
Embro 155(W)	58.8	16.4	96	92	M-high	20.0
Funk G-80	82.0	17.7	97	97	M-high	15.5
Funk G-91	74.0	17.7	98	93	M-low	18.6
Funk G-704	71.0	18.6	99	83	M-high	21.5
Funk G-711	68.8	20.7	96	94	High	19.5
Haudrich 10(W)	56.9	16.5	97	92	M-high	25.9
Haudrich 13	80.6	17.8	97	94	Medium	21.2
Haudrich 21	73.6	16.2	99	94	M-low	22.4
Haudrich 126	77.7	17.2	96	92	Medium	15.7
Haudrich 200	71.5	17.7	98	92	M-high	13.3
Haudrich 784	70.8	17.9	98	89	High	16.3
Illinois 1850 (Station)	62.7	18.1	99	89	High	12.5
Illinois 1852 (Station)	75.0	17.8	98	96	High	11.6
Keystone 107(W)	46.5	19.7	97	83	M-high	34.2
Keystone 222	76.2	20.7	94	92	High	18.8
Moews CB 60A	79.1	16.6	98	89	Medium	40.0
Moews CB 69A	80.3	18.0	96	94	M-high	16.6
Moews CB 90A	73.3	17.0	95	92	Medium	12.7
P.A.G. 403	77.6	15.9	98	95	Low	19.3
P.A.G. 484	68.4	18.9	96	94	High	8.8
P.A.G. 486	69.5	19.6	89	94	High	11.2
P.A.G. 620(W)	64.8	16.8	98	90	M-high	35.2
P.A.G. 631(W)	81.9	17.5	95	91	Medium	39.0
P.A.G. 636(W)	58.2	18.1	94	95	M-high	13.5
Pioneer 302	80.1	18.5	96	96	M-high	25.4
Pioneer 313B	86.4	16.6	90	97	M-low	11.5
Pioneer 505(W)	50.3	17.2	99	86	High	33.5
Pioneer 510(W)	45.7	15.5	97	91	M-high	43.3
Pioneer 6727	86.2	16.1	93	96	M-low	9.3
Pioneer 9212	82.3	16.8	98	96	Medium	6.4
Producers 13-1	74.5	16.0	98	90	Medium	13.6
Producers 1018	76.9	16.1	98	97	Medium	16.7
Producers 1022	76.4	17.2	97	97	Medium	14.3
Producers 1050	68.2	14.7	98	93	Medium	14.3
Southern States Potomac	75.6	17.6	95	94	High	20.1
Stiegelmeier 600	63.9	16.6	95	88	Low	34.6
Stull 100	66.6	15.6	94	81	Medium	42.1
Stull 400(W)	61.9	17.2	99	92	M-high	24.7
Super-Crost 880	61.5	17.3	97	90	Low	37.0
Tiemann 72	80.0	17.3	98	92	M-low	20.0
Tiemann 78	79.9	15.3	99	92	M-low	7.2
U.S. 13 (Graham)	79.4	16.6	98	91	M-high	14.1
Whisnand 834	65.5	17.4	96	86	Medium	32.9
Whisnand 851	80.3	18.1	96	93	Medium	10.8
Whisnand 917(W)	57.3	17.0	96	94	M-high	27.1
Average of all entries	**71.2**	**17.2**	**97**	**92**	.....	**22.4**
Difference necessary for significance	**5.0**	....	**2.5**	..	.....	**11.5**

[a] Elbowing at lower nodes following attack by corn rootworm (*Diabrotica spp.*) and windstorms in June.

SUMMARY

In 1954, 256 hybrids were grown on five test fields in Illinois. Growing conditions were excellent at all locations except Brownstown and Eldorado. These two tests suffered a water deficiency in late summer.

1954 yields. The DeKalb field in northern Illinois had the highest yield, 107.7 bushels an acre. Average yields per acre on the other test fields were: Urbana 105.0, Galesburg 95.2, Eldorado 71.2, Brownstown 37.2.

The average yield of all hybrids tested was 83.5 bushels. This was 5 percent below the 1953 average. The three fields in central and northern Illinois, which were located on the same farms as in 1953, showed slight yield increases.

Three-year summaries, 1952-1954. The highest-yielding hybrids in the three-year summaries were the following:

Northern Illinois — Pioneer 347, Illinois 1091A (Dittmer), Pioneer 325, P.A.G. 277, Holmes 11A, Illinois 1277.

West North-Central — Pioneer 313B, Holmes 39, Munson 5, Schwenk 24, Schwenk 34, Ainsworth X-21.

Central — Funk G-95, Schwenk 24, Canterbury 400, Holmes 39, Morton 70, Holmes 13.

Southern — Trisler 33A, Ainsworth X-14-3, Bruns P-38, Illinois 1570, U.S. 13, Bear OK-72B, Ainsworth X-13-3.

Extreme Southern — Pioneer 6727, Funk G-711, Pioneer 302, Ainsworth X-14A, Moews CB 69A, Tiemann 78.

Lodging. Very little lodging occurred in any test in 1954. However, a few varieties were significantly different from others in this respect.

Moisture. The average moisture percent in the grain for all hybrids averaged 19.1 percent. At three locations the average moisture was below 20 percent.

Stand. The average stand obtained for all varieties was 90 percent.

Insect damage. Corn borer infestation was severe at Galesburg and moderate at Urbana. The number of stalks broken and ears dropped because of borer attack was recorded at Galesburg

and dropped-ear counts were made at Urbana. Significant differences were obtained between hybrids.

At Eldorado the hybrids exhibited differential elbowing or bending at the lower nodes. This was due to root damage by corn rootworms (*Diabrotica* spp.) and a windstorm in early July.

A state summary of the 1954 insect situation and a preview for 1954 are again included.

Disease damage. No diseases occurred in the commercial tests severe enough to warrant the recording of data.

Corn inbreds again showed great differences in resistance to Stewart's disease in a test at Urbana. Further evidence of a correlation between resistance to Stewart's leaf blight and northern leaf blight was obtained.

Data on disease prevalence and estimates of losses for the state are again included.

Seed treatment test. For the most part, treatments made 1 month or 13 months before planting gave about the same results in stands and yields.

The average increase in yield from all treatments was 5.1 bushels or 8.7 percent.

INDEX TO ENTRIES

When the table number for an entry is repeated in the index, the entry appears in both the summary portion and the 1954 portion of the table.

(The reaction of certain inbred lines of corn to Stewart's leaf blight is shown in Table 4, page 9.)

D

Hybrid	Table
DeKalb 248	6
DeKalb 406	6, 6
DeKalb 407	6
DeKalb 455	6
DeKalb 628A	3, 7, 8, 8
DeKalb 817A	3, 7, 8, 9
DeKalb 825	3, 7
DeKalb 837	3, 7, 8, 9, 10
DeKalb 847	3, 7, 7, 8, 8, 9, 10
DeKalb 875	8, 8, 9, 10
DeKalb 898	10
DeKalb 910(W)	9, 10
DeKalb 925(W)	9, 10
Doubet 25	3, 6, 7, 7
Doubet 41	8, 8, 9, 10, 10
Doubet 42	3, 7, 9, 9, 10
Doubet 43	3, 7, 7, 8, 8, 9, 9, 10, 10
Doubet 45	6

E

Embro 101	9
Embro 155(W)	10

F

Frey 410	6
Frey 425	6, 6
Frey 645	8, 8
Frey 692	8, 8
Frey 892	8
Funk G-16A	6, 6
Funk G-77A	6, 6
Funk G-80	10
Funk G-91	8, 8, 9, 9, 10
Funk G-95	3, 7, 7, 8, 8
Funk G-95A	3, 7, 8
Funk G-134	9, 9
Funk G-704	10
Funk G-711	10, 10

G

Griffith 129	3, 7

H

Haudrich 10(W)	9, 10, 10
Haudrich 13	9, 9, 10, 10
Haudrich 21	9, 10
Haudrich 126	9, 9, 10, 10
Haudrich 200	10
Haudrich 784	9, 9, 10
Holmes 11A	6, 6
Holmes 13	8, 8
Holmes 17	6, 6
Holmes 21A	7
Holmes 39	3, 7, 7, 8, 8
Holmes 46	3, 7
Huebsch 16	6
Huebsch 24	6, 6
Huebsch 81	6, 6
Huey 23	3, 7, 7, 9
Huey 42	3, 7, 7
Huey 50	9
Huey 106	9
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Hulting 102	3, 7
Hulting 238	6
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I

Hybrid	Table
Illinois 21 (Dittmer)	3, 7, 7
Illinois 21 (Mountjoy)	8, 8
Illinois 101 (Huebsch)	6, 6
Illinois 1091 (Mountjoy)	3, 7
Illinois 1091A (Dittmer)	6, 6
Illinois 1246 (Mountjoy)	8, 8
Illinois 1277 (Nichols)	6, 6
Illinois 1337 (Dittmer)	3, 7
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Illinois 1559B (Nichols)	6
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Illinois 1570 (Graham)	3, 7
Illinois 1570 (Mountjoy)	8, 8
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Illinois 1800 (Station)	6, 6
Illinois 1813 (Station)	8
Illinois 1814 (Station)	3, 7
Illinois 1831 (Station)	3, 7
Illinois 1850 (Station)	9, 10
Illinois 1852 (Station)	9, 10
Illinois 1863 (Station)	6
Illinois 1873 (Station)	3, 7
Illinois 1902 (Station)	6
Illinois 6021 (Station)	8
Illinois 6075 (Station)	8

K

Keystone 38A	8, 9
Keystone 44	6, 6
Keystone 48	8, 8
Keystone 107(W)	9, 10, 10
Keystone 222	10

L

Lowe 315	6
Lowe 355	6
Lowe 414R	6
Lowe 424	6
Lowe 514	3, 7, 7
Lowe 520	8, 8
Lowe 523	3, 7, 8, 8, 9, 9
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Lowe 833	9

M

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Moews 14E	6
Moews 14EE	6
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Moews 520	3, 7, 8
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Moews 524	3, 7, 8
Moews 535	9
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Moews CB 69A	10, 10
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Morton 12A	3, 7, 8, 9
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Munson 15	9, 9
Munson 77	3, 6, 7
Munson 119	3, 7, 8, 8, 9, 9

N

Hybrid	Table
Nichols 5B	6, 6
Nichols 75A	6
Null 68	3, 7
Null 83	3, 7

O

Hybrid	Table
Ohio C-92 (Nickel)	8

P

Hybrid	Table
P.A.G. 173	8, 8, 9
P.A.G. 234	6
P.A.G. 244	6
P.A.G. 253	6
P.A.G. 277	6, 6
P.A.G. 303	3, 6, 7, 7
P.A.G. 347	3, 7
P.A.G. 351	8
P.A.G. 383	3, 7, 8, 9, 9
P.A.G. 392	3, 7, 7, 8, 8
P.A.G. 403	3, 7, 8, 9, 9, 10
P.A.G. 484	10, 10
P.A.G. 486	9, 10, 10
P.A.G. 620(W)	9, 9, 10, 10
P.A.G. 631(W)	9, 9, 10
P.A.G. 636(W)	10
P.A.G. 7220	6
Pioneer 300	9
Pioneer 302	8, 8, 9, 9, 10, 10
Pioneer 313B	3, 7, 7, 8, 8, 9, 10
Pioneer 325	6, 6
Pioneer 332	9
Pioneer 337	6, 6
Pioneer 345	3, 7
Pioneer 347	6, 6
Pioneer 354	6
Pioneer 505(W)	10
Pioneer 510(W)	10
Pioneer 6063	3, 7, 8, 8
Pioneer 6727	8, 9, 9, 10, 10
Pioneer 9212	3, 7, 8, 9, 10
Pioneer X0101	3, 7
Producers 13-1	3, 7, 8, 9, 10
Producers 311	6
Producers 314	6
Producers 315	6
Producers 320	6
Producers 326	6
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Producers 525	3, 7
Producers 730	8
Producers 900	3, 7, 8
Producers 940	3, 7, 8
Producers 946	8, 9
Producers 1018	9, 10
Producers 1022	9, 10
Producers 1050	9, 10

R

Hybrid	Table
Robe 20	3, 7

S

Hybrid	Table
Schwenk 17	6
Schwenk 24	3, 7, 7, 8, 8
Schwenk 27	3, 7, 8
Schwenk 34	3, 7, 7
Sieben 320	3, 7
Sieben 340	3, 6, 6, 7, 7
Sieben 360	3, 7
Sieben 440E	6, 6
Sieben 450	6, 6
Sieben 560	6, 6
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Stewart 51	3, 7, 7
Stewart 56	6
Stewart 60	3, 7
Stiegelmeier 300	3, 7
Stiegelmeier 301	3, 7, 8
Stiegelmeier 379	3, 6, 7
Stiegelmeier 400	8
Stiegelmeier 600	9, 10
Stull 100	10
Stull 400(W)	10
Super-Crost 440	6
Super-Crost 660	8
Super-Crost 880	9, 10, 10

T

Hybrid	Table
Tiemann 61	3, 6, 6, 7, 7
Tiemann 72	8, 8, 9, 10
Tiemann 78	3, 7, 8, 9, 9, 10, 10
Trisler 32	8, 8
Trisler 32B	8, 9
Trisler 33A	8, 9, 9
Trisler 33B	9

W

Hybrid	Table
Whisnand 419	8
Whisnand 804	8, 8
Whisnand 810	8, 8, 9, 9
Whisnand 830	9
Whisnand 834	10, 10
Whisnand 851	9, 9, 10, 10
Whisnand 917(W)	10, 10

U

Hybrid	Table
U.S. 13 (Graham)	3, 7, 7, 9, 10
U.S. 13 (Stone)	8

CONTRIBUTORS OF SEED

A.E.S. Hybrids	A.E.S. 702 (Graham Seed Co., Springfield; Mountjoy Seed Co., Atlanta) A.E.S. 805 (Graham; R.G. Stone, Pleasant Plains)
Ainsworth Hybrids	Ainsworth Seed Co. — Mason City
Appl Hybrids	Appl's Hybrid Seed Co. — St. Joseph
Bear Hybrids	Bear Hybrid Corn Co. — Decatur, Box 628
Bruns Hybrids	Bruns Seed Co. — Camp Point
Canterbury Hybrids	C. E. Canterbury Seed Co. — Cantrall
Crow Hybrids	Crow's Hybrid Corn Co. — Milford

DeKalb Hybrids	DeKalb Agricultural Assn.	DeKalb
Doubet Hybrids	E. W. Doubet	Hanna City
Embro Hybrids	Ed. F. Mangelsdorf & Bro., Inc.	1020 S. 4th St., St. Louis, Mo.
Frey Hybrids	Frey Hybrid Corn Co.	Gilman
Funk Hybrids	Funk Brothers Seed Co.	Bloomington
Griffith Hybrids	Griffith Seed Co.	Bloomington
Haudrich Hybrids	Haudrich Hybrid Corn Co.	Belleville
Holmes Hybrids	Holmes Hybrids	Edelstein
Huebsch Hybrids	L. A. Huebsch & Son	Mundelein
Huey Hybrids	Huey Seed Co.	Carthage
Hulting Hybrids	G. E. Hulting & Son	Geneseo
Illinois Hybrids	**Ill. 21** (Dittmer Seeds, Carthage; Mountjoy) **Ill. 101** (L. A. Huebsch & Son) **Ill. 1091** (Mountjoy) **Ill. 1091A** (Dittmer) **Ill. 1246** (Mountjoy) **Ill. 1277** (Nichols) **Ill. 1337** (Dittmer) **Ill. 1511** (Appl) **Ill. 1559B** (Nichols) **Ill. 1570** (Bruns; Graham; Mountjoy) **Ill. 1575** (Ill. Agr. Exp. Sta.) **Ill. 1656** (Mountjoy) **Ill. 1767, 1800, 1813, 1814, 1831, 1850, 1852, 1863, 1873, 1902, 6021, 6075** (Ill. Agr. Exp. Sta.)	
Keystone Hybrids	Corneli Seed Co.	101 Chouteau Ave., St. Louis, Mo.
Lowe Hybrids	Lowe Seed Co.	Aroma Park
Moews Corn Belt Hybrids	Moews Corn Belt Co., Inc.	Boswell, Ind.
Moews Hybrids	Moews Seed Co.	Granville
Morton Hybrids	Roy A. Morton & Sons	Bowen
Mountjoy Hybrids	Mountjoy Hybrid Seed Co.	Atlanta
Munson Hybrids	Carl Munson	Galesburg
Nichols Hybrids	Nichols Bros.	Hebron
Null Hybrids	Null Seed Farms	Colchester
Ohio C-92	Nickel Seed Co.	Concord
P.A.G. Hybrids	Pfister Assoc. Growers, Inc.	Aurora
Pioneer Hybrids	Pioneer Hi-Bred Corn Co. of Ill.	Princeton
Producers Hybrids	Producers Seed Co.	Piper City
Robe Hybrids	Robe Hybrid Corn Co.	Smithshire
Schwenk Hybrids	W. T. Schwenk & Sons	Edwards
Sieben Hybrids	Sieben Hybrids	Geneseo
Southern States Hybrids	Cooperative Seed & Farm Supply Co.	Muncie
Stewart Hybrids	Frank S. Stewart	Princeville
Stiegelmeier Hybrids	H. L. Stiegelmeier	Normal
Stull Hybrids	Stull Corn Co.	Sebree, Ky.
Super-Crost Hybrids	E. J. Funk & Sons	Kentland, Ind.
Tiemann Hybrids	Tiemann Seed Co.	Bloomington
Trisler Hybrids	J. L. Trisler	Fairmount
U. S. Hybrids	U. S. 13 (Graham; R. G. Stone)	
Whisnand Hybrids	Myron Whisnand	Arcola

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